

R E M A R K S

Reconsideration of this application, as amended, is respectfully requested.

THE TITLE

The title has been amended to more clearly indicate the nature of the invention to which the claims are directed, as required by the Examiner.

THE CLAIMS

Claims 26, 31, 32, 36 and 39 have been canceled, without prejudice.

In addition, claim 30 has been amended to depend from claim 28, as suggested by the Examiner to overcome the rejection under 35 USC 112, second paragraph.

According to item 6 on page 3 of the Office Action, claim 30 has been examined as depending from claim 28. Therefore, it is respectfully submitted that no new issues have been raised which require further consideration on the merits and/or a new search, and it is respectfully requested that the amendments to the claims be approved and entered under 37 CFR 1.116.

THE PRIOR ART REJECTION

Claims 20-23 and 33 were rejected under 35 USC 103 as being obvious in view of the combination of US 2003/0184645 ("Biegelsen et al") and JP 2000-165850; claims 24-27, 31, 32, 34-37 and 39 were rejected under 35 USC 103 as being obvious in view of the combination of Biegelsen et al and US 2001/0022861 ("Hiramatsu"); claims 28 and 30 were rejected under 35 USC 103 as being obvious in view of the combination of Biegelsen et al, Hiramatsu and USP 6,144,804 ("Inoue"); and claims 29 and 38 were rejected under 35 USC 103 as being obvious in view of the combination of Biegelsen et al and JP 11-168749 ("Mitsushige et al"). These rejections, however, are respectfully traversed with respect to the claims set forth hereinabove.

Re: Claims 20 and 33

The Examiner states at the top of page 4 of the Office Action that Biegelsen et al does not disclose a recording unit, determination unit, or a synchronizing unit as recited in independent claim 20 (or the recording, determining and synchronizing steps of independent method claim 33). For this reason, the Examiner has cited Horikawa to supply the missing teachings of Biegelsen et al.

It is respectfully submitted, however, that even if Horikawa and Biegelsen et al were combinable as suggested by the Examiner, the resultant combination would not teach or suggest "a determination unit which determines whether an image pickup frame period is synchronized with a period of an optical signal which is included in the image signal output from the image pickup device" as recited in independent claim 20, or "determining whether an image pickup frame period is synchronized with a period of an optical signal which is included in the output image signal" as recited in independent claim 33.

That is, although Horikawa has been cited as disclosing determining whether an image pickup frame period is synchronized with a period of an optical signal including an th eoutput image signal, in Horikawa it is merely assumed that the on/off cycle of the LED is in synchronism with the horizontal synchronization pulse (last two lines in paragraph [0017]).

Thus, Horikawa does not disclose, teach or suggest determining whether the image pickup frame period is synchronized with the period of the optical signal.

In addition, Horikawa also clearly does not disclose, teach or suggest synchronizing the image pickup frame period with the period of the optical signal when it is determined that the image

pickup frame period is not synchronized with the period of the optical signal.

With the structure and method recited in independent claims 20 and 33, a synchronization operation is only performed when it is necessary to do so. With another synchronization unit, for example, an image pick-up cycle and a cycle of an optical signal are always monitored to detect a cycle deviation, and regardless of whether or not the image pickup frame period is in synchronization with a period of an optical signal, the cycle deviation would always controlled to perform synchronization. That is, a synchronization operation is always performed even if it is not necessary to do so. By contrast, with the structure and method recited in independent claims 20 and 33, the number of control operations is small, thereby resulting in lower power consumption.

It is respectfully submitted, therefore, that even if it were obvious to provide a synchronization unit in Biegelsen et al in view of the teachings of Horikawa, the combination of Biegelsen et al with Horikawa would not achieve or render obvious "a determination unit which determines whether an image pickup frame period is synchronized with a period of an optical signal which is included in the image signal output from the image pickup device" as recited in independent claim 20, or

"determining whether an image pickup frame period is synchronized with a period of an optical signal which is included in the output image signal" as recited in independent claim 33. And it is respectfully submitted that the combination of Biegelsen et al with Horikawa therefore also would not achieve or render obvious "a synchronizing unit which synchronizes the image pickup frame period with the period of the optical signal by shifting a phase of the image pickup frame period when the determination unit determines that the image pickup frame period is not synchronized with the period of the optical signal" as recited in independent claim 20, or "synchronizing the image pickup frame period with the period of the optical signal by shifting a phase of the image pickup frame period when it is determined that the image pickup frame period is not synchronized with the period of the optical signal" as recited in independent claim 33.

Accordingly, it is respectfully submitted that independent claims 20 and 33 patentably distinguish over the combination of Biegelsen et al and Horikawa under 35 USC 103.

Re: Claims 24 and 34

On page 6 of the Office Action, the Examiner asserts that Biegelsen et al discloses a detector, a specifying unit, and a controller as recited in independent claim 24, and the detecting,

specifying, and control operation steps of independent method claim 34.

Specifically, the Examiner asserts that paragraph [0053] of Biegelsen et al discloses a detector which detects a transmitting position of an optical signal in the object image based on the image signal output from the image pickup device. In addition, the Examiner asserts that paragraphs [0059] and [0073] of Biegelsen et al discloses a specifying unit which specifies an area of the object image based on changes in the transmitting position detected by the detector. Still further, the Examiner asserts that paragraph [0065] of Biegelsen et al discloses a controller which executes a control operation based on the area specified by the specifying unit.

With the structure and method of claims 24 and 34, it is possible to specify an area of the object image based on changes in the transmitting position detected by the detector. See also, for example, page 16, lines 5-23 of the specification.

By contrast, Biegelsen et al merely discloses in paragraph [0053] thereof that LEDs emit signals to establish location, and that the pattern of infrared blinking can be used to positively identify infrared LEDs and to transfer data.

Paragraph [0059] of Biegelsen et al, moreover, discloses that a camera that receives an IR signal from a communicator may

maintain focus on the person with the communicator. And paragraph [0073] of Biegelsen et al discloses that if a pointer (which emits a beam in a wavelength range detectable by a camera) is aimed at a display screen, for example, the camera can focus on the screen, such that the screen is displayed (instead of a speaker) on the display of a conference.

That is, while Biegelsen et al discloses using an optical signal to identify an intended subject for a camera, Biegelsen et al does not disclose, teach or suggest that a transmitting position of an optical signal in the object image is detected, and that an area of the object image based on changes in the transmitting position detected by the detector. That is, although Biegelsen et al discloses that the camera captures an image of a subject based on an LED or pointer signal, for example, Biegelsen et al does not disclose that an area of an image is specified based on a transmitting position of an optical signal that is detected in the image.

Accordingly, it is respectfully submitted that Biegelsen et al does not disclose, teach or suggest, the detector recited in claim 24 and the detecting step of claim 34. And it is respectfully submitted, therefore, that Biegelsen et al also clearly does not disclose, teach or suggest the specifying unit recited in claim 24 and the specifying step of claim 34.

The secondary reference Hiramatsu, moreover, has merely been cited as disclosing recording an image signal output from an image pickup device.

It is respectfully submitted, therefore, that independent claims 24 and 34 patentably distinguish over the combination of Biegelsen et al and Hiramatsu under 35 USC 103.

Re: Claims 25 and 35

On page 7 of the Office Action, the Examiner asserts that Biegelsen et al discloses a detector, a recognition unit, and a controller as recited in independent claim 25, and the detecting, recognizing, and control operation steps of independent method claim 35.

Specifically, the Examiner asserts that paragraph [0053] of Biegelsen et al discloses a detector which detects a transmitting position of an optical signal in the object image based on the image signal output from the image pickup device. In addition, the Examiner asserts that paragraph [0073] of Biegelsen et al discloses a recognition unit which recognizes a moving pattern of a transmitting source of the optical signal based on changes in the transmitting position detected by the detector. Still further, the Examiner asserts that paragraph [0073] of Biegelsen

et al discloses a controller which executes a control operation based on the moving pattern recognized by the recognition unit.

With the structure and method of claims 25 and 36, it is possible to execute a control operation in response to the moving pattern recognized by the recognition unit. See also, for example, page 16, line 24 to page 17, line 20 of the specification.

By contrast, paragraph [0053] of Biegelsen et al merely discloses that LEDs emit signals to establish location, and that the pattern of infrared blinking can be used to positively identify infrared LEDs and to transfer data. And paragraph [0073] of Biegelsen et al merely discloses that if a pointer (which emits a beam in a wavelength range detectable by a camera) is aimed at a display screen, for example, the camera can focus on the screen, such that the screen is displayed (instead of a speaker) on the display of a conference.

That is, Biegelsen et al discloses recognizing that a pointer is used to point to an object, and acquiring and displaying an image of the objected pointed to by the pointer (paragraph [0073]).

However, as pointed out above, Biegelsen et al does not disclose, teach or suggest that a transmitting position of an optical signal in the object image is detected. It is

respectfully submitted, moreover, that Biegelsen et al clearly does not disclose, teach or suggest recognizing a moving pattern of the transmitting source of the optical signal based on changes in the transmitting position detected by the detector, and executing a control operation based on the recognized moving pattern.

It is respectfully submitted, therefore, that Biegelsen et al clearly does not disclose, teach or suggest the structure and method of independent claims 25 and 35.

The secondary reference Hiramatsu, moreover, has merely been cited as disclosing recording an image signal output from an image pickup device.

It is respectfully submitted, therefore, that independent claims 25 and 35 patentably distinguish over the combination of Biegelsen et al and Hiramatsu under 35 USC 103.

Re: Claims 27 and 37

On page 8 of the Office Action, the Examiner asserts that Biegelsen et al discloses a detector, an area setting unit, and a controller as recited in independent claim 27, and the detecting, setting, and control operation steps of independent method claim 37.

Specifically, the Examiner asserts that paragraph [0053] of Biegelsen et al discloses a detector which detects a transmitting position of an optical signal in the object image based on the image signal output from the image pickup device. In addition, the Examiner asserts that paragraph [0059] of Biegelsen et al discloses an area setting unit which sets an area corresponding to the transmitting position detected by the detector. Still further, the Examiner asserts that paragraphs [0059] and [0065] of Biegelsen et al disclose a controller which executes a control operation based on the area.

With the structure and method of claims 27 and 37, it is possible to execute an exposure control operation in response to an exposure detection area set by an area setting unit to correspond to a transmitting position of an optical signal that is detected by a detector in an acquired object image. See also, for example, page 12, line 27 to page 13, line 7 of the specification.

By contrast, as pointed out hereinabove, it is respectfully submitted that paragraph [0053] of Biegelsen et al does not, in fact, disclose, teach or suggest a detector which detects a transmitting position of an optical signal in the object image based on the image signal output from the image pickup device.

It is respectfully submitted, moreover, that as pointed out hereinabove, Biegelsen et al merely discloses a camera that may "maintain focus" on a participant associated with a communicator 10 that is emitting an IR signal (paragraph [0059]). That is, Biegelsen et al at best discloses focusing on a subject. And it is respectfully pointed out that focusing, which is a function to drive a lens and mechanically search for a focus point, is clearly completely different from white balance control, which is an electronic operation mainly to adjust a color balance after image pickup.

Indeed, the Examiner acknowledges that Biegelsen et al does not disclose exposure control, and for this reason, the Examiner has cited Hiramatsu to supply the missing teachings of Biegelsen et al.

It is respectfully pointed out, however, that the cited portions of Hiramatsu (paragraphs [0058]–[0059]) merely disclose that the exposure time is shorter when detecting movement of a pointing image than when detecting the pointed position of the pointing image.

And it is respectfully submitted that this disclosure of Hiramatsu clearly does not relate to performing exposure control based on an exposure detection area set by an area setting unit

to correspond to the detected transmitting position in an object image of an optical signal.

It is respectfully pointed out, moreover, that even if it were assumed that Biegelsen et al discloses performing autofocus to focus on a subject having a communicator 10 that is emitting an IR signal, Biegelsen et al clearly does not disclose an area setting unit that sets an exposure detection area corresponding to the detected transmitting position in an object image of an optical signal.

That is, neither Biegelsen et al nor Hiramatsu discloses, teaches or suggests an area setting unit which sets an exposure detection area corresponding to the transmitting position detected by the detector, and a controller which executes an exposure control operation based on the exposure detection area set by the area setting unit, as recited in independent claim 27, or the corresponding steps of independent method claim 37.

By contrast, Biegelsen et al at best discloses maintaining focus on a subject, and Hiramatsu at best discloses setting different exposure times when detecting movement or a position of a pointing image.

Hiramatsu, moreover, has additionally been cited only as disclosing recording an image signal output from an image pickup device.

It is respectfully submitted, therefore, that even if it were obvious to provide combine Biegelsen et al with Hiramatsu, the resultant combination clearly would not logically achieve or render obvious the structure and method recited in independent claims 27 and 37.

It is respectfully submitted, therefore, that independent claims 27 and 37 patentably distinguish over the combination of Biegelsen et al and Hiramatsu under 35 USC 103.

Re: Claims 29 and 38

On page 13 of the Office Action, the Examiner asserts that Biegelsen et al discloses a detector, an area setting unit, and a controller as recited in independent claim 29, and the detecting, setting, and control operation steps of independent method claim 38.

Specifically, the Examiner asserts that paragraph [0053] of Biegelsen et al discloses a detector which detects a transmitting position of an optical signal in the object image based on the image signal output from the image pickup device. In addition, the Examiner asserts that paragraph [0059] of Biegelsen et al discloses an area setting unit which sets an area corresponding to the transmitting position detected by the detector. Still further, the Examiner asserts that paragraphs [0059] and [0065]

of Biegelsen et al disclose a controller which executes a control operation based on the area.

With the structure and method of claims 28 and 39, it is possible to execute a white balance control operation in response to a color evaluation area set by an area setting unit to correspond to a transmitting position of an optical signal that is detected by a detector in an acquired object image. See also, for example, page 12, lines 16-28 of the specification.

By contrast, as pointed out hereinabove, it is respectfully submitted that paragraph [0053] of Biegelsen et al does not, in fact, disclose, teach or suggest a detector which detects a transmitting position of an optical signal in the object image based on the image signal output from the image pickup device.

It is respectfully submitted, moreover, that as pointed out hereinabove, Biegelsen et al merely discloses a camera that may "maintain focus" on a participant associated with a communicator 10 that is emitting an IR signal (paragraph [0059]). That is, Biegelsen et al at best discloses focusing on a subject. And it is respectfully pointed out that focusing, which is a function to drive a lens and mechanically search for a focus point, is clearly completely different from white balance control, which is an electronic operation mainly to adjust a color balance after image pickup.

Indeed, the Examiner acknowledges that Biegelsen et al does not disclose white balance control, and for this reason, the Examiner has cited Mitsushige et al to supply the missing teachings of Biegelsen et al.

It is respectfully pointed out, however, that while the abstract of Mitsushige et al discloses performing auto white balance control, neither Biegelsen et al nor Mitsushige et al disclose, teach or suggest setting an area as a color evaluation area that corresponds to the transmitting position of an optical signal detected in an object image. And it is respectfully submitted that, even if considered in combination, Mitsushige et al and Biegelsen et al do not suggest the area setting unit recited in independent claim 29 or the corresponding step of independent method claim 38.

It is respectfully submitted, therefore, that even if considered in combination, Biegelsen et al and Mitsushige et al do not disclose, teach or suggest an area setting unit which sets a color evaluation area corresponding to the transmitting position detected by the detector, and a controller which executes a white balance control operation based on the color evaluation area set by the area setting unit, as recited in independent claim 29, or the corresponding steps of independent method claim 38.

Mitsushige et al, moreover, has additionally been cited only as disclosing recording an image signal output from an image pickup device.

It is respectfully submitted, therefore, that even if it were obvious to provide combine Biegelsen et al with Mitsushige et al, the resultant combination clearly would not logically achieve or render obvious the structure and method recited in independent claims 29 and 38.

And it is respectfully submitted, therefore, that independent claims 29 and 38 patentably distinguish over the combination of Biegelsen et al and Mitsushige et al under 35 USC 103.

* * * * *

In view of the foregoing, it is respectfully submitted that independent claims 20, 24, 25, 27, 29, 33-35, 37 and 38, and all of the claims respectively depending therefrom all clearly patentably distinguish over Biegelsen et al, taken singly in any combination with any of the other cited references, under 35 USC 103.

Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,

/Douglas Holtz/

Douglas Holtz
Reg. No. 33,902

Frishauf, Holtz, Goodman & Chick, P.C.
220 Fifth Avenue - 16th Floor
New York, New York 10001-7708
Tel. No. (212) 319-4900

DH:iv